

-continued

225	230	235	240
Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val			
245	250	255	
Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser			
260	265	270	
Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu			
275	280	285	
Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro			
290	295	300	
Val Leu Asp Ser Asp Gly Ser Phe Leu Tyr Ser Lys Leu Thr Val			
305	310	315	320
Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met			
325	330	335	
His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser			
340	345	350	
Pro Gly Thr Gly Xaa Gly Xaa Xaa Gly Xaa Xaa Gly Xaa Gly Thr Phe			
355	360	365	
Gly Thr Gly Gly Ala Ser Ala Gln Ala Ser Leu Ala Ser Lys Asp Lys			
370	375	380	
Thr Pro Lys Ser Lys Ser Lys Lys Gly Ser Thr Gln Leu Lys Ser			
385	390	395	400
Arg Val Lys Asn Ile			
405			

1. A compound comprising a fusion protein, comprising an antibody or fragment thereof that transmigrates the blood brain barrier (BBB) a polypeptide that binds β -amyloid.

2. The compound of claim 1 further comprising a Fc fragment.

3. The compound of claim 1 or 2, wherein the polypeptide that binds β -amyloid comprises a sequence

(SEQ ID NO: 31)
X₁TFX₂TX₃X₄ASAQASLASKDKTPKSX₅X₆STQLX₇SX₈VX₉NI

wherein X₁ = G or A, X₂ = G or V, X₃ = G or A, X₄ = G or A, X₅ = G or V, X₆ = G or V, X₇ = G or V, X₈ = G or A, X₉ = G or A.

3. The compound of claim 2, wherein the polypeptide that binds β -amyloid comprises a sequence selected from the group consisting of:

(SEQ ID NO: 27)
SGKTEYMAFPKPFE~~SSSSIGAEKPRNKKLP~~EEVE~~SSRTPWLYEQEGEVE~~

KPFIKTFGFSV~~SEK~~STSSNRKNQLDTNGRRQFDEESLESFSSMPDPVDP

TTVT~~KTF~~KTRASAQASLASKDKTPKSX₅X₆STQLX₇SX₈VX₉NI

LQOSNRNACNEAPETGSDFSMFEA;

(SEQ ID NO: 28)
FSSMPDPDV~~DPTT~~VT~~KTF~~KTRASAQASLASKDKTPKSX₅X₆STQLX₇SX₈VX₉NI;

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(SEQ ID NO: 29)
KDKTPSKSKRNSTQ~~LSRV~~KVNITHARRILQOSNRNACN;

(SEQ ID NO: 30)
KTFKTRKASAQASLASKDKTPKSX₅X₆STQLX₇SX₈VX₉NI;

(SEQ ID NO: 32)
KTFKTRKASAQASLASKDKTPKSX₅X₆STQLX₇SX₈VX₉NI;

(SEQ ID NO: 33)
KTFKTRKASAQASLASKDKTPKSX₅X₆STQLX₇SX₈VX₉NI;

(SEQ ID NO: 34)
KTFKTRGASAQASLASKDKTPKSX₅X₆STQLX₇SX₈VX₉NI;

(SEQ ID NO: 35)
KTFKTGGASAQASLASKDKTPKSX₅X₆STQLX₇SX₈VX₉NI;

(SEQ ID NO: 36)
GT~~FGTG~~GASAQASLASKDKTPKSX₅X₆STQLX₇SX₈VX₉NI;

(SEQ ID NO: 37)
KTFKTRKASAQASLASKDKTPKSX₅X₆STQLX₇SX₈VX₉NI;

(SEQ ID NO: 38)
KTFKTRKASAQASLASKDKTPKSX₅X₆STQLX₇SX₈VX₉NI;

and

a sequence substantially identical to any of the above sequences.

4. The compound of any one of claims 1 to 3, wherein the antibody or fragment thereof comprises a sequence selected from the group consisting of:

an antibody or fragment thereof comprising a complementarity determining region (CDR) 1 sequence of GFKITHYTMG (SEQ ID NO:1), a CDR2 sequence of